

Holly Horrigan – Comments to the National Math Panel – September 14, 2006

Thank you all for this opportunity. I came to speak today as a concerned parent, hoping to present an example of how curriculum choices and pedagogy can influence student outcomes.

I live in the town of Needham, Massachusetts, an affluent suburban community located on the Route 128 corridor. Needham has a reputation for great schools.

Last year, my oldest child began third grade at the Newman Elementary School. We expected a successful year for him, as he is an eager and able learner. I was taken by surprise when he began coming home and crumpling his math homework, exclaiming that “math is nonsense” and “I stink at math”. He refused to do his homework. I don’t usually get involved with homework, but I reluctantly went over one day to see exactly what the matter was. I was shocked by the worksheets I saw in his Investigations workbook. The problem became clear. There were questions for which insufficient information had been provided. There was no room on the worksheets to write down any calculations. They were asking him to solve a subtraction problem, but they hadn’t taught him an algorithm to perform multi-digit subtraction yet.

It took only ten minutes for me to teach my son how to borrow and carry, and I instructed him to use the algorithm and use pencil and paper at school. He was relieved and happy.

But, the next day at school, my son was told he was not allowed to borrow and carry unless he could explain the algorithm in front of the class — which he did (and with a complete description of place values, too).

I raised my concerns with one of his two teachers. A veteran teacher, he immediately substituted worksheets he had used in the past, and instructed my child separately while the other teacher taught Investigations to the rest of the class. With this more traditional approach, the problem was solved. My son enjoyed math again, learned all the materials, and advanced beyond Massachusetts standards for his grade level.

I wondered, how could the school have high MCAS scores with this poor curriculum? My research revealed that the curriculum was introduced five years ago. Since that introduction, the percentage of 4th graders at the advanced or proficient level plummeted from 85% advanced or proficient to only 53%. I have provided this graph for your reference.

Our Curriculum leaders refuse to consider alternatives to Investigations for our core curriculum. They ignore the poor MCAS results, complaints from concerned parents, and teacher survey results citing insufficiency of the program.

I have found that this constructivist pedagogy is deeply entrenched, and the mathematical knowledge of the decision makers is sometimes lacking. A new teacher in our district related to me what she was taught last year while earning her teaching certificate. As if

speaking from a script, she said that teaching multiplication tables is “drill and kill”, and that there are often “no right answers in mathematics”. She admitted knowing nothing about algebra, saying, “Algebra really isn’t my concern. I just need to teach second grade math”. How then, can she judge what constitutes a good foundation for the algebra that lies ahead?

I am not a mathematician or an educator, but I have completed six years of undergraduate and graduate math, I’ve worked in applied statistics, and I’ve patented and published a novel mathematical model in my field. Upon reading the Investigations workbook, Investigations appears to be a program designed to teach a child “How to get by”. It is reminiscent of an SAT prep course I took decades ago that taught how to increase your odds of guessing correctly when you get stuck on a question. “When you don’t know how to solve the problem”, the instructor would say, “then estimate, or guess one of the answers and see if it works”

I’ve attached three pages from my son’s third grade Investigations workbook. Only question #14 on page 41 asks for a precise, manual calculation, and even that question expects the answer to be represented in an English sentence rather than in a mathematical equation. The rest of the questions can be performed with a calculator, or require only approximations, or have no answers at all. Though Mr. Mayer from TERC told the Wall Street Journal that parents mistakenly believe Investigations doesn’t value computational skills, I think these worksheets vindicate parents like me who think these materials are useless if not counterproductive.

As you continue your deliberations, I would ask you to consider curriculum materials and pedagogy as well as standards. Good standards are critical and are the first step, but they will be unattainable with poor pedagogy and empty or misleading exercises.

Thank you.

Holly Horrigan
Needham, Massachusetts